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Descriptions of new species of TORTRICIDÆ.

BY C. H. FERNALD, A. M.

Teras ferruginiguttana n. sp.—Head, palpi, basal joints of antennæ, thorax and fore wings, light gray sprinkled with dark gray scales which are so arranged on the fore wings as to give a faint impression of an oblique central band and spots on the costa and outer border. Surface of the fore wings with the scales more or less tufted. A tuft on the fold near the base of the wing, an elongated streak through the oblique stripe on the cell, and a spot between this and the outer border, bright rust-red. Fringes lighter gray. Hind wings light yellowish, silky; streaked with irregular cross lines of light fuscous which run together more or less towards the apex. Fringes and abdomen above and beneath, very light straw yellow. Under side of all the wings very light yellow reticulated with fuscous. Costa and fringes of the fore wings reflecting the markings of the upper side. Legs light yellowish, tarsi ringed with fuscous. Expanse 28 mm.

Habitat.—Colorado. Described from one female.

Teras chalybeana n. sp.—Head, thorax and fore wings, light steel-blue. Palpi light steel-blue on the outside fading into cream color beneath and within. Face and under side of antennæ at base cream color. Thorax with a transverse black band behind the collar, extending across the patagiæ, and with some black scales at the posterior part which is untufted. Anterior wings and fringes concolorous with the head and thorax. A small black band extends from the costa at the base of the wing partially across, forming, when the wings are closed, a continuation of the transverse black band of the thorax. A costal spot extends on the costa from the basal third to a point three-fourths the distance from the base to the apex, and across the wing to the middle of the cell. This spot is formed by two parallel curved lines of black scales about one millimeter apart, more or less in tufts which start from the basal third of the costa, curve down and outward, and return to the costa towards the apex where they are much broken and mixed with the ashy scales of the wings. A small tuft of black scales occurs on the fold near the base of the wing and another above it. Beneath silky steel-gray with cream colored spots along the costa. Fringes lighter. Posterior wings and abdomen above concolorous with the under side of fore wings. Under side and the fringes lighter. Under side of body and abdomen with the legs light ochre-yellow. Tarsi annulated with brown. Expanse 22 mm.

Habitat.—Orono, Me., New York. One specimen was taken in Orono, at sugar, Sept. 20, 1880. Described from two males and one female.

Teras cervinana n. sp.—Head white, stained with dull red; palpi light fuscous on the outside, white above and inside, antennæ reddish fuscous. Thorax reddish fawn color, untufted, and with a transverse white stripe extending across in front even on to the costa of the fore wings. Fore wings reddish fawn colored, touched with white along the costa. A dark brown semicircle enclosing a white spot, rests upon the middle of the costa and extends to the middle of the cell. A few minute tufts of dark brown scales occur on the cell immediately below the semicircle, another on the fold near the base of the wing, another above this last on the subcostal vein, and a few towards the outer margin in an oblique line. Fringes lighter. Under side pale, silky fuscous, reflecting the markings of the

upper surface. Hind wings and abdomen above, pale fuscous, fringes and under side lighter with some small faint maculations towards the apex. Expanse 17 mm.

Habitat.—Massachusetts.

I have what I think is a variety of this species from Georgia. It differs in having the fawn color of the fore wings broken up by white, so as to appear like minute checkers.

Teras americana n. sp.—Head reddish white; palpi white within, reddish fuscous on the outside, last joint nearly concealed. Thorax whitish; the collar, tips of the patagiæ and two stripes across the thorax, light red. Fore wings white, dimly reticulated with light red which is suffused along the borders. A dark red spot rests on the costa a little before the middle, and another before the apex, both of which are connected with a third which rests on the cell, so as to form a triangle, the base of which rests on the costa. A red line extends from the outer costal spot obliquely across to the anal angle, having in it a few sprinkles of tufted black scales, and a similar line nearly parallel to the former extends across the wing from the inner part of the cellular spot. A black fleck of tufted scales rests on the fold near the base of the wing, and another above it on the subcostal vein. Fringes light reddish, darker at the base. Hind wings above and beneath whitish, with very pale fuscous reticulations at the apex. Fringes concolorous with the wing. Under side of fore wings very pale reddish fuscous, reticulated, reflecting the markings of the upper side. Abdomen and legs concolorous with the hind wings. Fore and middle legs touched on the outside with light fuscous. Expanse 15–16 mm.

Habitat.—Massachusetts, California. Described from three males and one female. Californian examples have the fore wings more or less suffused with the reddish.

Teras fishiana n. sp.—Head, thorax and fore wings, light rust-red, the markings more or less plainly indicated by dark brown and gray scales. Palpi rust-red above and externally, lighter within and beneath. Head and antennæ above, rusty brown, inclining to reddish gray in one example. Thorax reddish brown, lighter behind with a dark brown transverse stripe behind the collar extending to the patagiæ. Fore wings light gray, the basal portion as far as the oblique band sprinkled more or less with dark brown scales, and suffused with reddish brown on the basal part of the costa. The basal side of the oblique band begins at the basal third of the costa, and extends obliquely across the wing slightly curving outwardly on the cell, but returning to the general direction again at the median vein, and terminates near the outer third of the internal margin. This line is free from the dark brown atoms, and thus appears lighter, but is followed by the darker shade of the terminal portion of the wing which is reddish brown sprinkled with dark brown atoms, the shade being darkest on the cell and costa, lighter towards the anal angle. A second pale line is faintly shown extending from near the middle of the costa obliquely out to the outer and upper angle of the cell where it curves down slightly ending at the anal angle. Fringes concolorous with the adjacent parts of the wing, but without the dark brown atoms. Under side silky gray, straw yellow on the costa and outer margin, irrorated with gray. Fringes lighter, with a reddish tinge towards the apex. Hind wings light silky gray, with darker scattered and remote irrorations; beneath lighter, the irrorations more distinct. Fringes above and beneath lighter.

Abdomen concolorous with the hind wings; anal brush, straw yellow. Legs gray with the tarsi annulated with straw yellow. Expanse 26 mm.

Habitat.—Orono, Me. Described from three males, taken Sept. 17, 1879.

I take pleasure in dedicating this species to my friend Mr. Charles Fish, Principal of the High School in Brunswick, Me., who has collected many beautiful Tortricids for me.

Lophoderus quadrifasciana n. sp.—Head, thorax and fore wings, above and beneath lemon-yellow, uniformly reticulated with orange-red. Fore wings each with two narrow oblique bands, the first starting from the basal fourth of the costa, ends at the middle of the inner margin; the second starting from the middle of the costa, ends at the anal angle. These bands enlarge a little on the internal border. Hind wings sordid yellowish. Fringes and under side lighter. The males differ in having the oblique bands of the fore wings dark purplish-brown, the portion of the wing beyond the outer band more or less suffused with purplish-brown, the hind wings above fuscous, and all the wings a little lighter beneath. Expanse 16—17 mm.

Habitat.—Maine, New Hampshire, Massachusetts, New York, Illinois.

Lophoderus mariana n. sp.—Head, thorax and basal portion of fore wings ochre white. Palpi externally and antennæ, fuscous. Thoracic tuft, yellowish and fuscous at the tip. Fore wings with the basal patch dull yellowish-white, scarcely distinguishable from the ground color beyond, and sprinkled more or less with dark brown scales. Oblique band, starting from the middle of the costa, extends across the wing to the inner margin near the anal angle. The first third of this band is dark brown while the rest is dull ochery yellow sprinkled with dark brown scales. The band is somewhat constricted where it terminates on the inner margin and also between the brown and yellow parts. The outer part of the wing is chalky white with the veins and a spot above the anal angle faintly indicated by darker scales, while a dark brown lengthened spot, but slightly separated from the oblique band, and extended nearly to the apex, rests on the costa. Fringes yellowish with brown scales at the base. Under side fuscous, with lighter and sprinkled edges. Hind wings pale gray; fringes lighter with a pale gray line near the base. Under side whitish with gray sprinkles and fine spots along the costa and apically. Abdomen pale fuscous above, lighter beneath; anal brush straw-yellow, as are also the legs. Fore and middle legs touched with fuscous; tarsi annulated with brown. Expanse 19—21 mm.

Habitat.—Orono, Me., Massachusetts, New York.

Food.—Oak? Described from four males.

In naming this beautiful species for my wife, Maria E. Fernald, I wish to say that I am indebted to her more than to all others for assistance and encouragement in my studies.

Lophoderus coloradana n. sp.—Head, thorax and basal portion of the fore wings, bright fulvous; oblique band darker, beyond which the wings are light yellow with a dark brown costal spot. Head, palpi and thorax bright fulvous; thoracic tuft darker red. Anterior wings at the base, concolorous with the head and thorax; basal patch scarcely distinguishable from the ground color beyond, but

faintly indicated by several oblique reddish lines which cross this portion of the wing and end in small brown spots on the hinder border of the wing; the band passing obliquely across the middle of the wing is dark red inclining to brown, the color of the basal portion extends into this band forming an angle on the subcostal vein; beyond the oblique band the wing is white, washed with reddish, and has a dark brown spot on the costa between the band and the apex. The ground color is lightest before this spot. Fringe concolorous with the outer part of the wing. Under side lighter but faintly reflecting the marks on the costa above. Posterior wings whitish tinged with grayish towards the anal angle, beneath of the same color but lacking the grayish tinge; fringe above and beneath lighter. Abdomen and thorax beneath, as well as the legs, light straw-yellow; fore tarsi annulated with light fuscous. Expanse 26 mm.

Habitat.—Colorado. Described from one male and one female.

Tortrix alleniana n. sp.—Head, thorax and fore wings varying in different specimens from reddish to golden-yellow, with irregular cross lines on the fore wings of a darker reddish color. The beginning of an oblique stripe on the middle of the costa and a subapical patch of a dark reddish color, occurs in some specimens. Hind wings dull ochry white, somewhat sordid towards the anal angle. All the fringes above and beneath concolorous with the wings. Under side of hind wings straw-yellow, darker apically. Under side of fore wings light fuscous, yellowish around the edges. Abdomen above and beneath, and the middle and hind legs concolorous with the hind wings. Fore legs in front, concolorous with the head. Females differ in having narrower fore wings with more pointed apices, and they are of a darker red color, while the hind wings are grayish tipped with yellowish on the apex. Expanse 23—25 mm.

Habitat.—Orono, Me. Described from three males and three females taken in July.

I have named this species in honor of Mr. Anson Allen of Orono, who has greatly aided me by his extensive collecting and critical observations.

Tortrix semicirculana n. sp.—Palpi, head, thorax and fore wings, straw-yellow, more or less mottled and reticulated with light chestnut-brown. A quadrate spot of chestnut-brown rests on the middle of the costa of the fore wings, sending off a line to the humeral angle, and one to the anal angle. An oblique band starts from the outer fourth of the costa, and extends across to the middle of the hind margin, but is suddenly constricted to a narrow line below the cell. The arrangement of these marks together with the reticulations of the wing is such that two semicircular spots of the ground color of the wing are left, one resting on the middle and the other on the basal third of the costa. There are also two circular spots more or less clearly defined, one on the middle and the other at the end of the cell. Fringe white with the apical portion and basal line chestnut-brown. Beneath washed with light chestnut, scarcely showing the markings of the upper side. Hind wings white above and beneath, washed with a faint shade of yellow apically on the upper side. Abdomen above and beneath and also the legs, light straw-yellow, fore legs marked with chestnut. Expanse 23 mm.

Habitat.—Colorado. Described from four males and three females.

One specimen has the fore wings entirely washed with chestnut but not sufficient to obliterate the usual markings.

Eneetra flavibasana n. sp.—Head, palpi and thorax, dark purplish-brown. Fore wings, with the costa much arched, reddish-brown; central part of the base bright golden-yellow, with an oblique indistinct brown shade bordering it on the outside, and extending from the humeral angle up to near the middle of the costa. The apical portion of the wing is dark brown and is limited by a line from the anal angle up to the costa at the outer fourth. Numerous cross streaks show in an oblique light by their metallic reflections. Fringes lighter. Hind wings above and all the wings beneath, fuscous. The markings of the upper side of the fore wings show more or less beneath. Expanse 19–20 mm.

Habitat.—Texas, Illinois. Described from two females.

Cenopis groteana n. sp.—Head, palpi, thorax and fore wings, bright sulphur-yellow. Outer side of the palpi, sides of the thorax extending on to the costa of the fore wings, a band from the basal third of the costa extending down to the fold joined with one from the outer third of the costa leaving a semicircular patch on the middle of the costa, of the ground color of the wing, a speck on the costa towards the apex, one on the fold near the base and a series of atoms from the outer part of the outer band across the wing curving inward at a uniform distance from the outer margin, bright coffee-brown. Fringes sulphur-yellow. Abdomen and hind wings above and beneath pure silky white. Under side of the fore wings light straw color, plainly showing the markings of the upper side. All the legs white, the fore ones touched with brown in front. Expanse 20 mm.

Habitat.—Ohio. Described from one female.

I take pleasure in dedicating this beautiful species to my old friend Prof. A. R. Grote, who has rendered me so much valuable assistance in my entomological studies.

Cenopis quercana n. sp.—Head, palpi and antennæ, reddish-gray in the males, concolorous with the thorax and fore wings in the females. Thorax and fore wings dull rust-red. Basal patch, median and subapical bands lighter in the males and inclining to yellowish on the costa with strong greenish reflections when seen in an oblique light, showing most strongly in the females. Fringes lighter. Hind wings and abdomen above, light fuscous, lighter beneath. Under side of fore wings dull reddish, fuscous on the cell, the lighter markings of the upper side scarcely showing. Expanse ♂ 14 mm.—♀ 16 mm.

Habitat.—New York, Missouri, Texas.

Food.—Leaves of Oak, (Comstock); and cultivated Cherry, (Miss Murtfeldt). Described from four males and four females.

Phoxopteris goodelliana n. sp.—Head, palpi, thorax and fore wings, pale ashy white. Thorax touched with brown; a bright coffee-brown band extends through the fore wing from the middle of the base to the apex, occupying nearly a third of the breadth of the wing, in its widest part, and is twice indented on the posterior edge, once near the middle, and again more deeply, near the outer end, by the ocelloid patch. Through the centre of the band extends a somewhat irregular stripe of dark brown. Costa faintly marked with oblique stripes of brown which are more prominent towards the apex, leaving geminate streaks of the whitish ground color. Hind margin with about eight brown dots, and faint sprinkles of the same color over the ground color. Fringe white at the base and beneath the apex, where it is cut by a brown streak darker beyond. Hind wings

and abdomen above pale, silken, ashy; lighter beneath. Under side of fore wings pale ashy, with the fringe nearly white, and the costa lighter reflecting the oblique marks of the upper side. Expanse 28 mm.

Habitat.—Me., N. H., Mass. Described from two males and three females.

Penthina costimaculana n. sp.—Head dark ashy, palpi lighter beneath. Thorax dark brown with lighter cross stripes which cover the greater part of the patagiae. Fore wings pale pink, with the basal half much mottled with dark brown and black. Oblique band from middle of costa to hinder margin before the anal angle, dark brown with a broad black dash crossing it on the cell, and several below. The apical portion of the wing is dark brown with three pink flecks on the costa, from the middle one of which an oblique stripe of metallic-blue extends down to a pink fleck near the middle of the outer border, above which are two more pink flecks in a line on the border. The pink interspace between the oblique band and the brown apical portion of the wing is filled in below the end of the cell with black-brown and metallic-blue scales, so as to leave but little of the pink on this part of the wing, but the pink on the costal portion of the wing forms a very conspicuous spot by means of which this species may be distinguished. Fringes brown with two spots of pink below the apex, and one at the anal angle; basal line black. Hind wings and abdomen above dark brown; fringes and abdominal brush light yellow. Under side of all the wings of a lighter shade than the upper side of hind wings; fore wings show a series of yellow spots along the costa and at the anal angle. Expanse 13–14 mm.

Habitat.—Maine, Massachusetts. Described from two males.

Penthina interruptolineana n. sp.—Head and palpi dark ashy, lighter above. Thorax light ashy, with a stout dark red tuft, and touched with purplish. Fore wings with the basal part of the costa as far as the median oblique band, and nearly down to the fold, very light purplish-ash color; below this the wing is fulvous. The oblique band is fulvous, darker on the costa with a wavy basal edge, and scarcely separable below. The outer edge of this band has three teeth, one extends outward on the upper part of the cell, the second on the lower, and the third on the hinder border. Through the middle tooth extends an interrupted black line to the middle of the outer border. The outer part of the wing is purplish, with two more or less distinct oblique fulvous bands. Fringe purple inclining to ashy at the anal angle. Hind wings and abdomen above and beneath silky gray. Under side of fore wings darker. Expanse 14–15 mm.

Habitat.—N. H., Mass. Described from one male and two females.

Sericoris albiciliana n. sp.—Head covered with black and yellowish scales mixed; palpi whitish, touched on the outside with blackish, last joint blackish. Thorax black and yellowish mixed with some indications of cross bars; fore wings black with yellow scales intermingled, and also metallic-blue in irregular broken oblique lines. The yellow is so arranged as to show two geminate spots on the basal third of the costa, with metallic stripes starting from between each of these. On the apical portion of the costa there are three yellow geminate spots equidistant, starting into oblique stripes which are soon lost. From the first and third of these yellow spots oblique metallic stripes extend more or less regularly, one to the anal angle, the other to the middle of the outer border. Fringes above and beneath straw-yellow, broken by dark metallic above the anal

angle. Hind wings dark gray with white fringes, and a large white spot on the middle of the costa extending down to the median vein. Under side lighter than above, the white costal spot more diffuse, and not reaching the costa. Abdomen above silky gray, beneath yellowish. Expanse 14 mm.

Habitat.—Orono, Me. Described from three males and one female.

Eccopsis olivaceana n. sp.—Head sordid yellow; palpi light yellow, last joint fuscous. Thorax olivaceous with cross stripes of brown. Fore wings sordid pale yellow overlaid more or less with silvery scales. Basal patch, anal patch, central and subapical bands brown, largely overlaid with olivaceous scales. The central band has two teeth on its outer side, one on the upper side of the cell, the other on the lower. The costa is marked by two geminate, sordid white streaks between the basal patch and central band, and by four similar ones towards the apex, which extend into oblique lines. Fringe white, with a fuscous basal line, and marked with fuscous at the apex, and where the subapical band joins the outer margin. Hind wings and abdomen above, and all the wings beneath, fuscous. Expanse 12—14 mm.

Habitat.—Mass., Penn. Described from two males and four females.

Eccopsis atrodentana n. sp.—Head dull ochrey yellow, touched with brownish on the vertex; palpi lighter, with the last joint, and two spots on the outside of the second, dark brown. Thorax greenish-brown, touched with dull yellowish somewhat in cross bands. Fore wings whitish between the usual markings, overlaid with silvery scales which give pale bluish reflections. The usual markings are olive-green, more or less broken or overlaid with dark brown or black. The basal patch is outwardly angulated on the fold, and is more or less broken by the ground color of the wing, especially towards the costa. The central oblique band has two teeth on its outside, one on the upper side of the cell, the other on the lower, which are dark brown or black, especially the lower one. A triangular spot rests upon the hinder margin near the anal angle, and is sometimes connected with the lower portion of the oblique band which in some specimens is divided across below the lower tooth. The usual subapical band and costal geminations are present. Fringe smoky, broken somewhat with pale, sordid yellowish. Beneath light fuscous, showing the costal geminations in yellowish. Hind wings and abdomen above pale fuscous; fringe lighter, beneath paler than above. Under side of the body, and also the legs, pale ochreous; tarsi annulated with fuscous. Genicular brush smoky. Expanse 17—19 mm.

Habitat.—Ont., Ohio, Tex. Described from six males and one female.

Eccopsis corylaea n. sp.—Head, thorax and fore wings whitish, mixed with dark brown, and pale, greenish white scales. Palpi whitish, with the last joint, and the end of the second, dark fuscous. The usual markings of the fore wings are nearly obliterated, but there is a darker, indistinct band extending from the humeral angle obliquely up and out to the costa a little beyond the middle, and bordered below by a lighter shade. The subapical band only is clearly visible as well as the costal geminations, and a small apical spot of dark brown. Fringe purple, mixed to some extent with fuscous. Beneath pale fuscous reflecting the costal geminations. Hind wings fuscous, paler beneath. Expanse 14—15 mm.

Habitat.—White Mts., N. H. Described from two males and two females.

Eccopsis malana n. sp.—Head white in front and beneath, dark brown or nearly black above; palpi pure white, with the last joint and two small spots on the outside of the second one, fuscous. Thorax nearly black, with whitish cross bands. Fore wings white with silvery reflections. Basal patch black, represented on the costal half by a few scattered black scales, but on the inner margin, by a prominent black patch which has a re-entrant angle of the ground color on vein one, and an outward prolongation or tooth above the fold. The beginning of the oblique central band on the costa, and a small black spot at the end of the cell are all that remain of the band. The subapical band and costal geminations are present, all more or less overlaid with light scales. Fringes smoky with a black basal line. Hind wings and abdomen above fuscous; under side lighter. Legs whitish. Tarsi and tibiae annulated with dark brown. Expanse 15 mm.

Habitat.—New York, Illinois. Bred from larvæ on Apple leaves by Mr. Coquillett, in Illinois. Described from three males.

Semasia ferruginana n. sp.—Head ashy brown above, pure ashy in front; palpi whitish, with the last joint, outer end of second, and a dash on the outside of the same, ashy. Thorax and fore wings ferruginous brown. This color on the fore wings is in narrow longitudinal stripes with pale yellowish between, but towards the outer end of the wings, the ferruginous gradually suffuses the whole surface. A few indistinct metallic streaks occur on the apical portion of the costa, and the ocelloid patch is more or less completely surrounded by metallic scales, and shaded above and below by dark brown. Hind wings and abdomen above dark reddish-brown, under side of the hind wings lighter. All the fringes lighter than the adjacent part of the wings. Expanse ♂ 16—♀ 19 mm.

Habitat.—Mc., N. H., Mass. Described from one male and two females.

Semasia clavana n. sp.—Head and palpi white, slightly sordid; thorax very light gray; fore wings above light gray, with a white stripe from the base through the middle to the end of the cell; a white ocelloid patch with a few brown flecks on its sides; the outer third of the costa white, with several oblique, irregular streaks, and the basal part of the costa marked with brown flecks; a dark brown clavate stripe on the under side of the central white stripe extends to the middle of the wing. Fringes white, sprinkled with gray. Hind wings and abdomen above, and all the wings beneath, gray; fringes lighter. Legs white; tarsi annulated with gray. Expanse 14 mm.

Habitat.—Truro, Mass., Aug. 8. Described from two males.